

REMARKS

Claims 4-7, 20-30 are pending in this application. Claims 1-3, 8-19 have been canceled above without prejudice or disclaimer, to simplify this application. Claims 4, 6 have been amended as to dependency. As to the amendment to Claim 7, see, e.g., Applicants' specification at page 1, line 15.

As to new claims 27-30, see, e.g., Applicants' specification at page 7, lines 20-21; page 8, lines 3-4;

At page 3, Claims 1-6 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

To advance prosecution, and without necessarily agreeing with the Examiner, claims 1-3 have been canceled (without prejudice) and the dependency of claims 4-6 has been amended. The reason for these claims to be canceled or amended is to better permit focus on substance in this application rather than to unduly focus on terminology. The rejection under 35 U.S.C. 112, second paragraph thus is believed to be obviated.

At page 3 of the office action, Claims 1-3, 6-15, 25 and 26 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Brindoepeke, a previously cited reference. The Examiner cites col. 2, lines 54-64. The Examiner states his assumption (office action, page 4) that silence regarding side reactions suggests that these side reactions do not take place. The Examiner admits that Brindoepeke fails to explicitly disclose that the polyepoxide compound is an epoxidized vegetable oil, wherein a carbonated vegetable oil is produced wherein the epoxidized oil is ESBO, and the produced carbonated oil is CSBO. The Examiner states that based on the context of (f) (office action, pages 4-5), it appears that any of polyepoxides (a) through (e) would have been considered as suitable candidates to undergo the carbonation reaction. The Examiner also states his assumption that it appears that the molar ratios would have been obviously selected/controlled to ensure that significant side reactions did not occur. The Examiner's position therefore is that it would have been obvious to

use epoxidized vegetable/soybean oil in the carbonation reaction set forth in Brindoepe because Brindoepe et al. disclose a number of suitable polyepoxide candidate materials, including epoxidized vegetable/soybean oil.

Applicants respectfully traverse the obviousness rejection.

In Brindoepe there is no teaching to use natural or biobased materials as in Applicants' claimed invention. To the contrary, much of Brindoepe's work focuses on use of diisocyanates for reactants (see col. 6, line 52+).

Brindoepe clearly fails to teach producing a nonisocyanate polyurethane network as recited in Applicants' independent claims 7 and 25. Brindoepe completely fails to teach or disclose a NIPU or a polyurethane network. The Examiner has cited column 2, lines 55-58 and offered the theory that the reaction product inherently would have formed a NIPU network. However, a NIPU is not inherent in Brindoepe, as the Examiner argues. Producing polyurethanes without using isocyanates (which are toxic) is a specific and complicated field. Brindoepe clearly teaches to use isocyanates (col. 2, line 32; col. 6, line 24; col. 6, lines 52-col. 7, line 34), rather than to avoid them. Brindoepe absolutely is not teaching to make a NIPU, either expressly or even incidentally.¹

Also, in Brindoepe all of their examples make use of epoxide reactions and there is no indication of any cyclic carbonate reactions.

Applicants' claims therefore for the several reasons stated above are much removed from and not obvious over Brindoepe. Wherefore, reconsideration and withdrawal of the obviousness rejection based on Brindoepe are respectfully requested.

At page 6 of the office action, claims 4 and 5 have been rejected under 35 U.S.C. 103(a) as unpatentable over Brindoepe in view of December et al. (US Pat. No. 6,471,843).

Applicants respectfully traverse this obviousness rejection.

¹For brevity, the dependent claims are not separately addressed herein.

December '843 is focused on a very different area of technology than Brindoepeke. Namely, December relates to cathodic electrocoats. In column 57, lines 7-14, December discusses preferred chemistry using diisocyanates.

December is silent about vegetable oil based systems (natural resources). December principally focuses on the use of epoxide based reactions using low molecular weight epoxide compounds as can be read in December's examples.

Referring to December's claim 1 in column 22, the starting material is a branched alkyl of 5 to 30 carbons. Soy or other vegetable oils are at least well above 30 carbons in each species.

Even with Brindoepeke and December, a person of ordinary skill in Applicants' art still is far from the presently claimed oil-making invention. Wherefore, reconsideration and withdrawal of the obviousness rejection of claims 4 and 5 based on Brindoepeke are respectfully requested.

At page 7 of the office action, Claims 20-24 have been rejected under 35 U.S.C. 103(a) as unpatentable over Brindoepeke in view of Whelan et al. (US Pat. No. 3,072,613).

Applicants respectfully traverse this obviousness rejection.

Applicants' claim 20 recites a method of making a nonisocyanate polyurethane (NIPU) network, comprising: mixing (1) a carbonated vegetable oil and (2) an amine having functionality of at least two; wherein a NIPU network is formed.

Brindoepeke fails to teach a method of making a NIPU network and lacks any Example to a NIPU network. Using isocyanates is prominently disclosed in Brindoepeke, at col. 6, line 52 to col. 7, line 34. That is the opposite of Applicants' claimed invention which in claim 20 completely prohibits using isocyanates. Brindoepeke fails to teach or disclose that a polyurethane can be made without using isocyanates (which was the conventional way to make polyurethanes at the time of Brindoepeke).

Likewise, Whelan contains no teaching that isocyanates are to be

avoided. Whelan only discloses compounds that are dicarbonates and are not at all related to biobased vegetable oil chemistry. Whelan's examples all produce linear polymer systems (see col. 4, line 62, for example). Using vegetable oil materials and other natural resources as in the present invention leads to network systems, not to linear materials.

Even with Brindoepeke and Whelan, it is impossible for a person of ordinary skill in the art to arrive at a "nonisocyanate" method, much less the method of Applicants' claims 20-24.

Wherefore, reconsideration and withdrawal of the obviousness rejection of claims 20-24 are respectfully requested.

In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 4-7, 20-30 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephone or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,



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